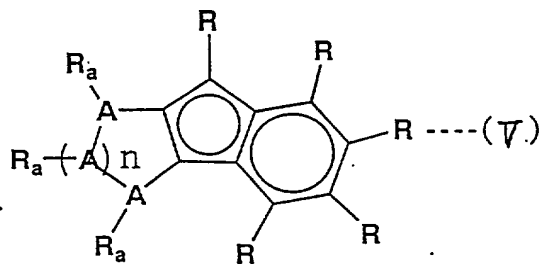
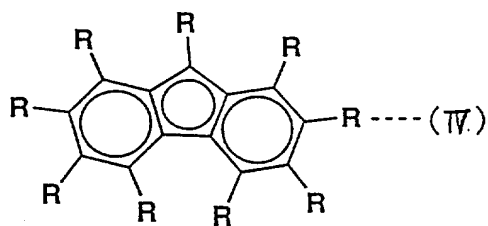
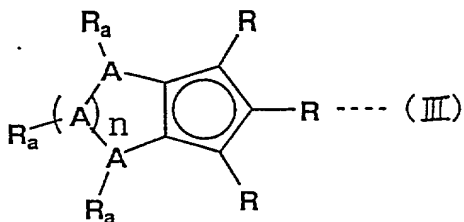
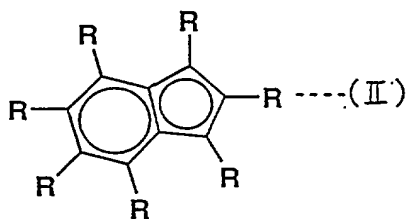
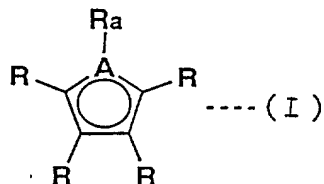
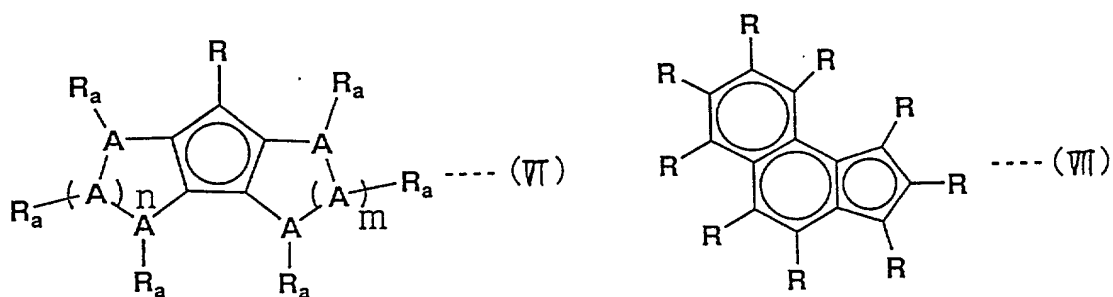


(II) As specific examples of the transition metal compounds of formula (4), mentioned are the following compounds.

They are transition metal compounds of formula (4), in which the group $(C_5H_5-eR^{11}_e)$ is any of the following formulae (I) to (VII):

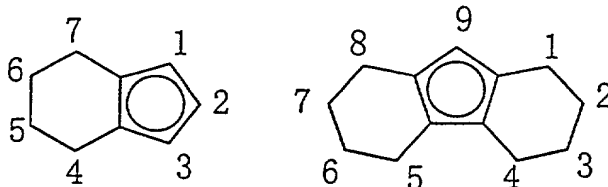




wherein A represents an element of Group 13, 14, 15 or 16, and plural A's may be the same or different; R represents a hydrogen atom, a halogen atom, an aliphatic hydrocarbon group having from 1 to 30 carbon atoms, an aromatic hydrocarbon group having from 6 to 30 carbon atoms, an alkoxy group having from 1 to 30 carbon atoms, an aryloxy group having from 6 to 30 carbon atoms, a thioalkoxy group having from 1 to 30 carbon atoms, a thioaryloxy group having from 6 to 30 carbon atoms, an amino group, an amido group, a carboxyl group, or an alkylsilyl or alkylsilylalkyl group having from 3 to 30 carbon atoms, and R's may be the same or different, and may be optionally bonded to each other to form a cyclic structure; a represents 0, 1 or 2; and n and m each represent an integer of at least 1.

Specific examples of the group $(C_5H_5-eR^{11}_e)$ are mentioned below.

In the indenyl derivatives and the fluorenyl derivatives, the position of each substituent is indicated by the following position numbers.



The group $(C_5H_5-eR^{11}_e)$ includes, for example, a cyclopentadienyl group, a methylcyclopentadienyl group, a 1,2-dimethylcyclopentadienyl group, a 1,3-dimethylcyclopentadienyl group, a 1,2,3-trimethylcyclopentadienyl group, a 1,3,4-trimethylcyclopentadienyl group, a tetramethylcyclopentadienyl group, a pentamethylcyclopentadienyl group, an ethylcyclopentadienyl group, a 1,2-diethylcyclopentadienyl group, a 1,3-diethylcyclopentadienyl group, a 1,2,3-triethylcyclopentadienyl group, a 1,3,4-triethylcyclopentadienyl group, a tetraethylcyclopentadienyl group, a pentaethylcyclopentadienyl group, an indenyl group, a 1-methylindenyl group, a 1,2-dimethylindenyl group, a 1,3-dimethylindenyl group, a 1,2,3-trimethylindenyl group, a 2-methylindenyl group, a 1-ethylindenyl group, a 1-ethyl-2-methylindenyl group, a 1-ethyl-3-methylindenyl group, a 1-ethyl-2,3-dimethylindenyl group, a 1,2-diethylindenyl group, a 1,3-diethylindenyl group, a 1,2,3-triethylindenyl group, a 2-ethylindenyl group, a 1-methyl-2-ethylindenyl